

Appln. No. 10/668,556
Amendment dated December 21, 2005
Response to Office Action mailed August 10, 2005

LISTING OF CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (Original) A cartridge that has a chamber to hold a recording material used for printing therein and is mounted on a printing apparatus, said cartridge comprising:

a sensor substitute module that substitutes for a sensor, which is not mounted on said cartridge;

a condition receiving module that receives an external specification of a detection condition for the sensor;

a control module that activates and controls said sensor substitute module, based on the specified detection condition; and

an output module that outputs a signal that substitutes for a result of detection and is provided by said sensor substitute module.

2. (Original) A cartridge in accordance with claim 1, wherein said sensor substitute module substitutes for a sensor that detects a status of the recording material held in the chamber.

3. (Original) A cartridge in accordance with claim 2, wherein the recording material is a predetermined color ink.

4. (Original) A cartridge in accordance with claim 2, wherein the recording material is a toner for any of a photocopier, a facsimile, and a laser printer.

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5. (Original) A cartridge in accordance with claim 2, wherein said sensor substitute module substitutes for a sensor that detects presence or absence of the recording material in the chamber.

6. (Original) A cartridge in accordance with claim 1, wherein said output module outputs the signal substituting for the result of detection by wireless communication.

7. (Original) A cartridge in accordance with claim 1, wherein said sensor substitute module generates a signal corresponding to the detection condition received by said condition receiving module.

8. (Original) A cartridge in accordance with claim 1, wherein each of said sensor substitute module and said control module are constructed as an arithmetic and logic circuit.

9. (Original) A cartridge in accordance with claim 1, wherein said sensor substitute module substitutes for a sensor that detects presence or absence of the recording material in the chamber according to a variation in resonance frequency of a piezoelectric element, and outputs a signal corresponding to a value of the resonance frequency representing the presence of the recording material in the chamber.

10. (Original) A cartridge in accordance with claim 9, wherein said condition receiving module receives a specified number of vibrations of the piezoelectric element as the detection condition to measure a time required for the specified number of vibrations, and

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said control module activates said sensor substitute module to generate vibration-related data corresponding to the time required for the specified number of vibrations.

11. (Original) A cartridge in accordance with claim 10, wherein the specified number of vibrations received by said condition receiving module is defined by specified positions of a measurement starting vibration and a measurement terminating vibration, and

said control module activates said sensor substitute module to generate the vibration-related data, based on the specified positions of the measurement starting vibration and the measurement terminating vibrations.

12. (Original) A cartridge in accordance with claim 1, said cartridge further comprising:

a memory that stores a parameter corresponding to a status of the recording material held in the chamber.

13. (Original) A cartridge in accordance with claim 1, said cartridge further comprising:

a wireless communication module that receives and transmits data from and to the outside of said cartridge by wireless communication,

wherein the external specification of the detection condition is received via said wireless communication module.

14. (Original) A cartridge in accordance with claim 13, wherein said wireless communication module has a loop antenna that effectuates the wireless communication and a

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power supply unit that utilizes an electromotive force induced in the loop antenna to supply electric power to said cartridge.

15. (Original) A printing apparatus with a cartridge mounted thereon, said cartridge having a chamber that holds a recording material used for printing therein,

said cartridge comprising:

a sensor substitute module that substitutes for a sensor, which is not mounted on said cartridge;

a condition receiving module that receives an external specification of a detection condition for the sensor;

a control module that activates and controls said sensor substitute module, based on the specified detection condition; and

an output module that outputs a signal that substitutes for a result of detection and is provided by said sensor substitute module,

said printing apparatus comprising:

a condition specification module that specifies the detection condition;

an input module that receives the signal output from said output module of said cartridge; and

a decision module that makes a decision on the assumption of a detection with the sensor, which is not mounted on said cartridge, in response to the input signal.

16. (Cancelled)